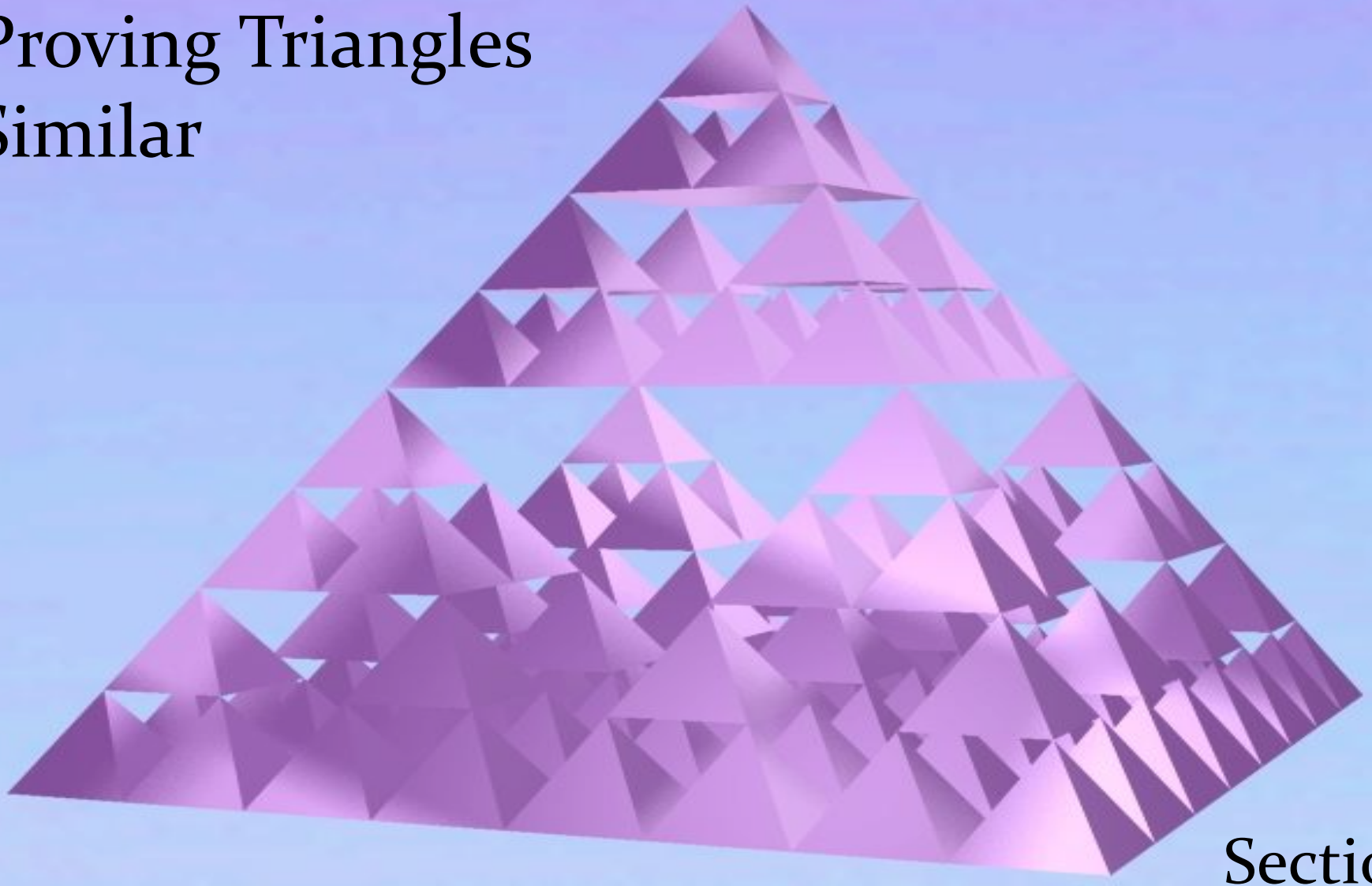
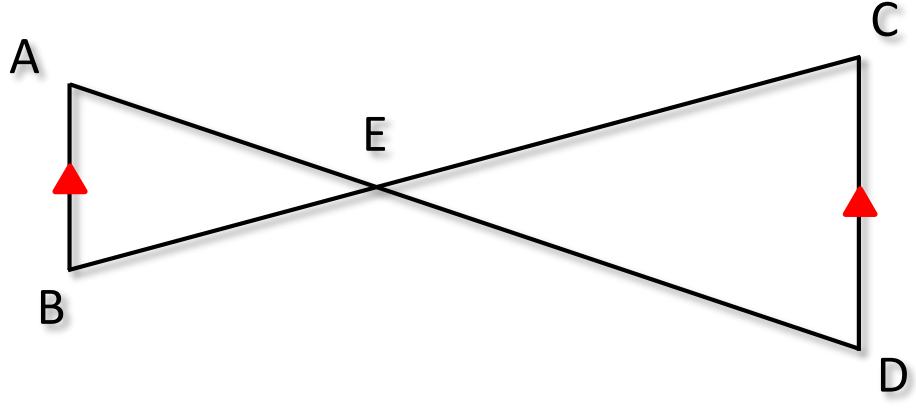
Proving Triangles Similar



Section 8.3

AA Similarity

Recall: If two angles of one triangle are congruent to the corresponding angles of another triangle, then the triangles are similar.



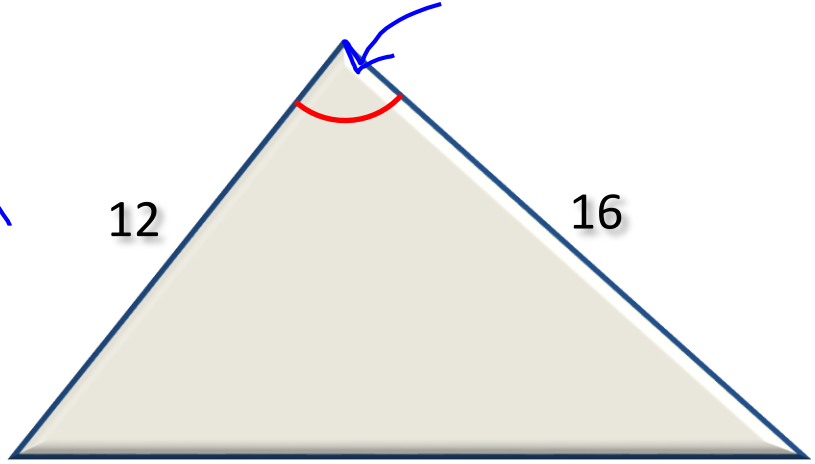
SAS Similarity

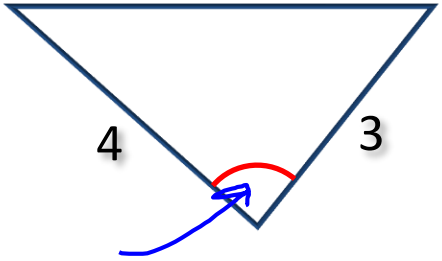
- If two sides of one triangle are proportional to the corresponding sides of another triangle and the **included** angles are congruent, then the triangles are similar.

$\frac{\text{big}}{\text{sm}} = \frac{12}{3} \overset{?}{=} \frac{16}{4}$

$48 \overset{?}{=} 48$

SAS Sim





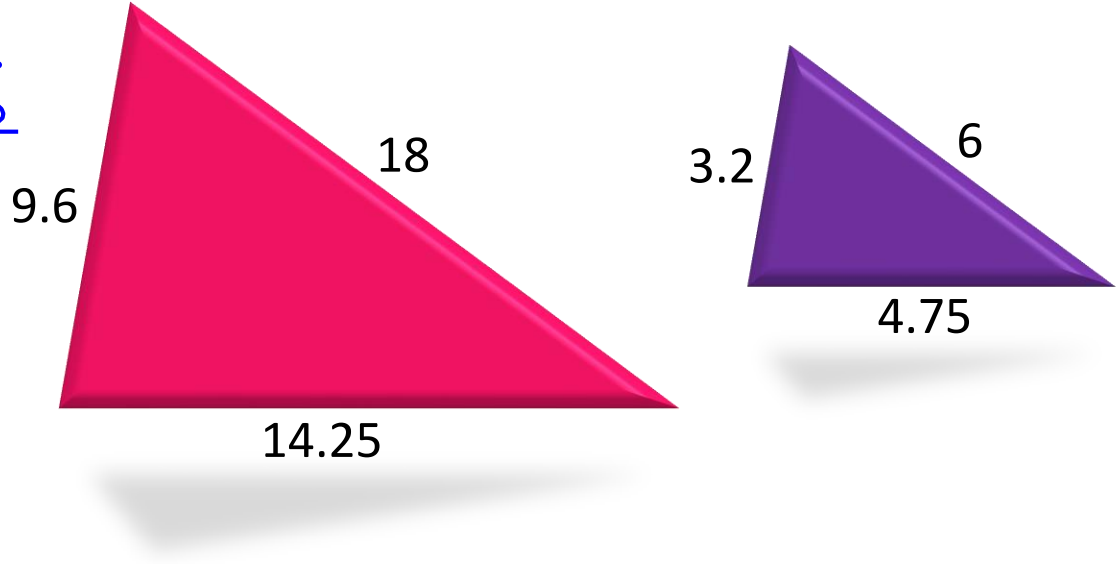
SSS Similarity

- If the measures of the corresponding sides of two triangles are proportional, then the triangles are similar.

pink / big
purple / small

$\frac{18}{6} = \frac{14.25}{4.75} = \frac{9.6}{3.2}$

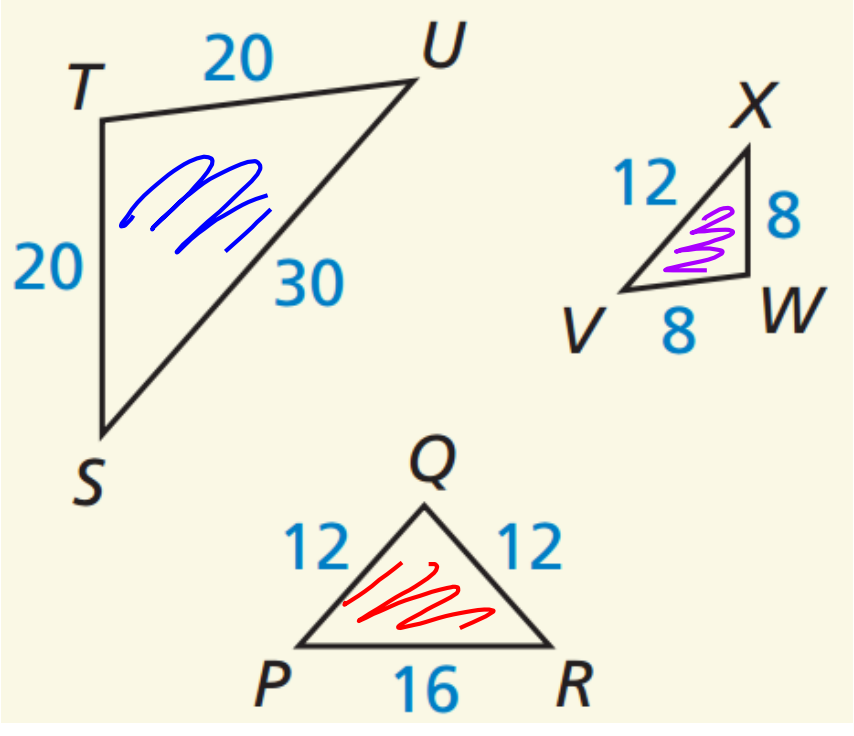
$3 = 3 = 3$



Is either △PQR or △STU similar to △VWX?

$\frac{20}{12} \stackrel{?}{=} \frac{30}{16}$

$320 \neq 360$



$\frac{20}{8} \stackrel{?}{=} \frac{30}{12}$

$240 = 240$

Find the value of x that makes $\triangle XYZ \sim \triangle HJK$.

$$\frac{30}{(x-5)} = \frac{15}{3}$$

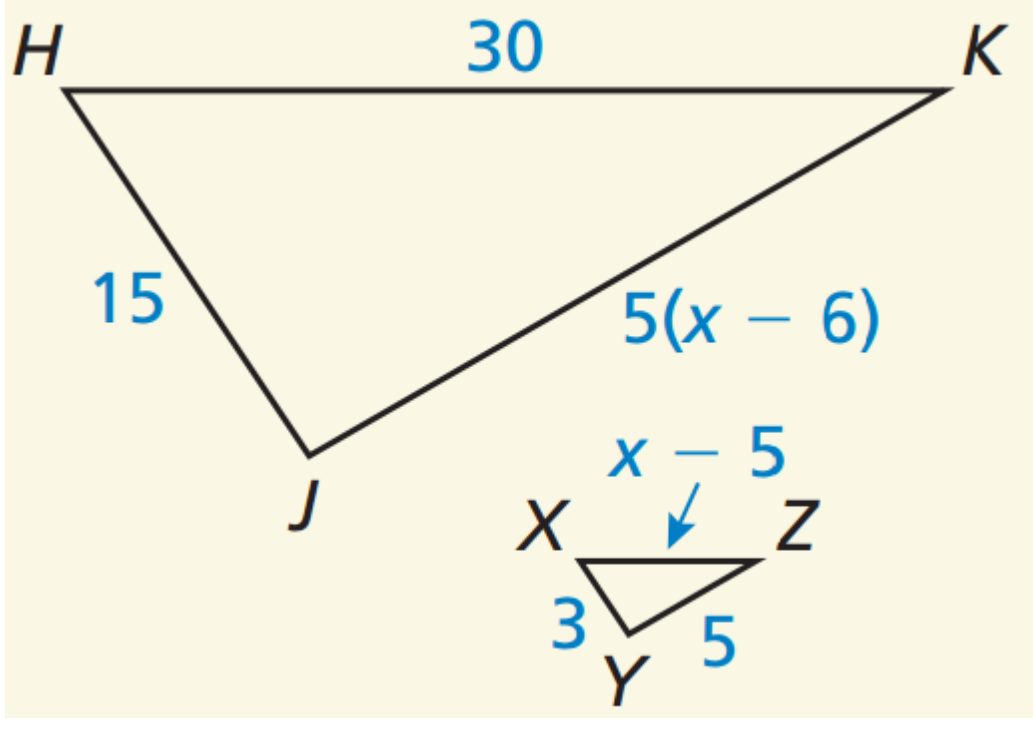
$$90 = 15x - 75$$

$$+75 \qquad +75$$

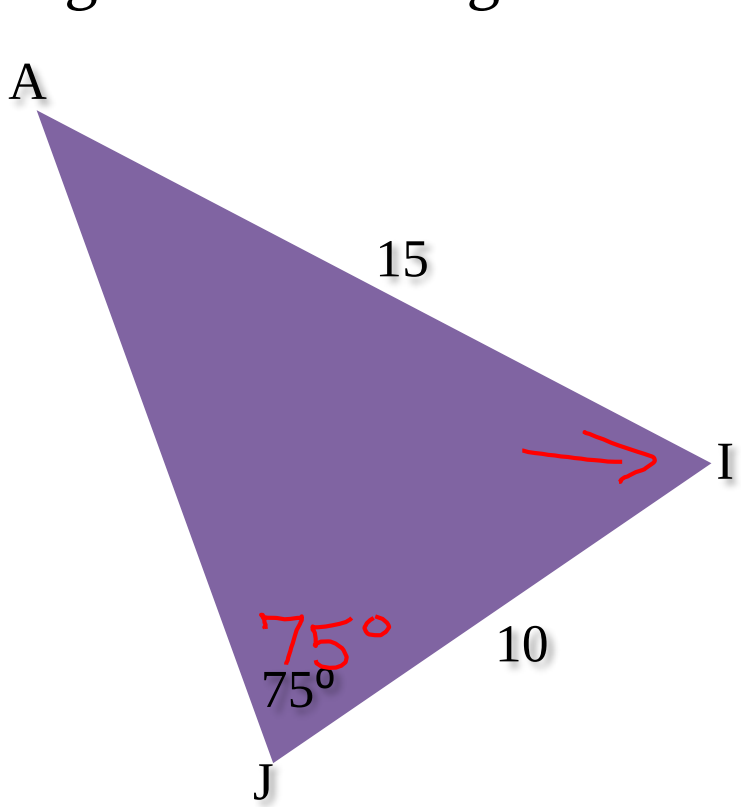
$$165 = 15x$$

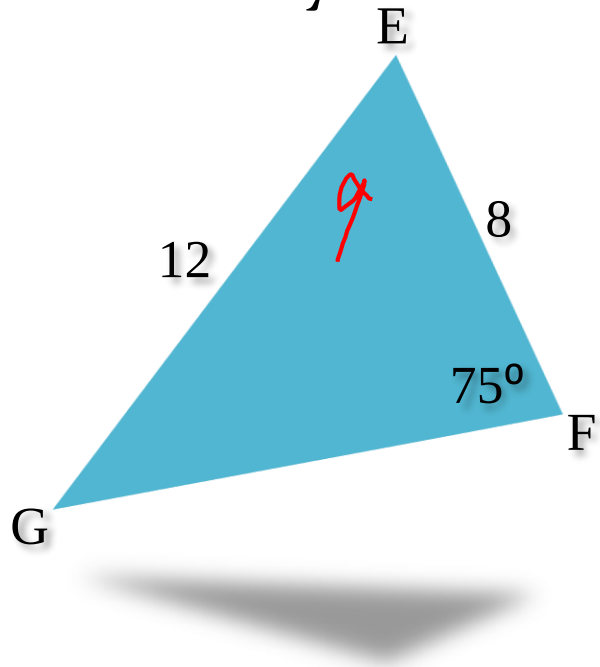
$$\frac{165}{15} = \frac{15x}{15}$$

$$11 = x$$



Determine whether each pair of triangles is similar. If similarity exists, write a mathematical sentence relating the two triangles. Give a reason for your answer.





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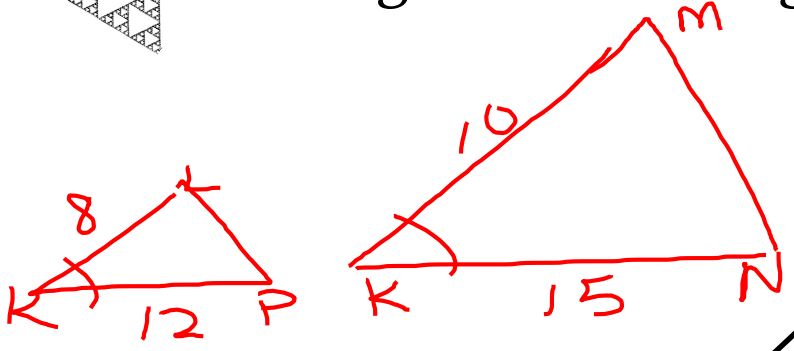
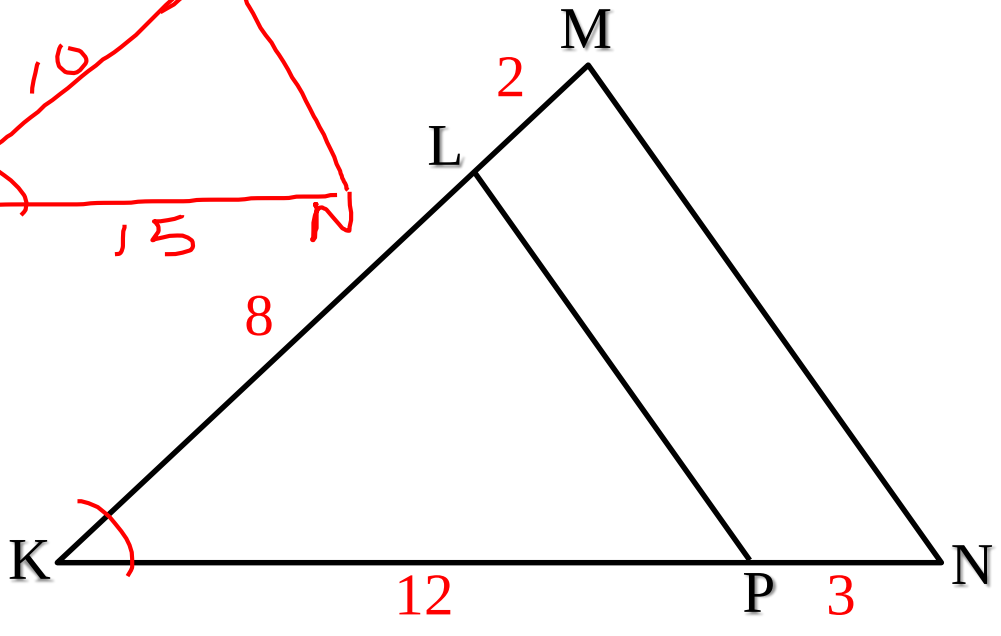
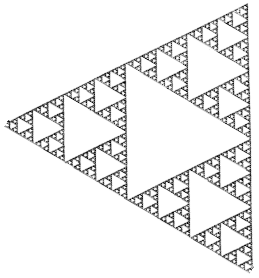


$\frac{12}{15} \stackrel{?}{=} \frac{8}{10}$

$.8 = .8$

yes by SAS Sim





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